# Agricultural rain/irrigation water management for sustainable intensification and smallholders resilience building

## Background and Justification

*Describe the nature of the innovations to be scaled*

As part of efforts to curb the problem and increase farmers’ resilience, the Ethiopian Government and the International Community exerted commendable efforts in terms of water capturing, storing and channelling to farms when and where it is needed. For example, one of the main pillars of the Ethiopian government’s food security strategy and also in Agricultural Growth and Transformation Plan (GTP-II, 2015-2020) is the development and implementation of water harvesting schemes to intensify agricultural productivity.

We will use landscape as a framework for operation and there are ample technologies related to water capturing, lifting, and delivering and on farm management to improve agricultural productivity and enhance livelihood resilience. Some of these technologies are proofed to be effective in AR project (e.g on farm water management and also farm pond water harvesting, water lifting techniques both manual and automated) while some others are tested elsewhere.

## Benefits

*What benefits are anticipated from the widespread uptake of these innovations?*

* Increases productivity through multiple harvesting and also ensures better crop performances through supplementary irrigation
* Increases income, food security for smallholder farmers
* The landscape level agricultural water management ensures upstream downstream healthy interaction in terms of sustainable water availability and ecosystem services
* Ensures access to nutrient dense food such as vegetables fruits and animal products under irrigation condition

## Research Questions

*Specify the research questions that will backstop the partnership. It is accepted that these might evolve over the lifespan of the partnership.*

* What are the different agricultural water management technologies and techniques that fits to the different landscape position?
* How these technologies and techniques ensure fair water allocation, sustainable delivery and balanced benefits of the community in the upstream down-stream landscapes?
* What associated agricultural packages (fruits, vegetables, cereals, fodder) are relevant for different water management technologies and also landscape positions?
* How best we can enhance proper and efficient service delivery?

## Development Partnerships

*List the partners who will be active, describe the contribution that they will make and how Africa RISING will support / backstop this with the research proposed. Also consider the comparative advantage offered by your partnerships. Make sure that you carefully consider roles and responsibilities of all partners.*

Federal Ministry of Agriculture, Regional Agricultural Bureau, District Agricultural offices: the major role of these partners is community mobilization for activities related to water harvesting (both in-situ and ex-situ water harvesting). It should be noted also that this activities can be implemented in already existing land management intervention sites by partners. Agricultural transformation agency is currently working in areas of farm irrigation and they are also in preparation for promotion of water lifting technologies (e.g solar pump). Also research and teaching institutes which are already partners will be involved in terms of non-Africa raising research technologies and also capacity building which should be an important ingredient to continue in AR \_II. Private sectors involved in production of water lifting technologies will be instrumental in delivering on these technologies.

## Impact Pathway

*Ensure that the contribution to FtF goals (e.g. improved food security, better health and nutrition, inclusive agriculture sector growth) are stated*

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| --- | --- | --- | --- |
| Activities | Outputs | Outcome | Impact |
| Identifying landscape for interventions | Report on target landscape, associated technologies and farm households | Better understanding of context specific agricultural water management technologies and also out scaling approaches | Partners adopted and implemented a sustainable approaches to agricultural water management |
| Targeting promising technologies and mix of technologies for different landscape positions ( potential linkage to different AR groups) |
| Targeting intervention farm households and domain households |
| Innovation platform ( involves intervention farms and domain farms, local decision makers, development partners | Innovation platform and bylaws | Transfer of skills and knowledge |
| Implementation | Documentation of interventions in terms of their performances, capacity development | Perception, skill and practices of interventions farmers, domain farmer and policy makers changed. | Intervention farmers will have improved food security, nutritional security and also domain farmers learn and adopt the interventions and approaches, better ecosystem services generated |
| Monitoring and evaluation | M&E report | Continuous learning and filtering of well performing business models | Better planning and implementation in the courses of continues up and out scaling of the approaches and the technologies |

## Targets / Zone of Influence

*How many potential beneficiaries are out there? How many do you hope to materially impact on? Where are they?*

Assuming 500 farm households within an average size landscape (about 2 medium size but diverse landscape units per District and 8 districts in four regions in Ethiopia and this will make up 16 landscapes and 10000 beneficiary household). This mean also more than 50,000 individuals will be benefited. Of the total 20 % will be considered as an intervention households and the remaining 80% as a domain households.

## Arrangements Required for Monitoring and Evaluation

*How will you generate and present the evidence that your partnership has been successful?*

Evidences will be generated through engagement partners and successful monitoring of deliverables in mile stones and deliverables. Some of the evidences involve:

* Number of technologies and approaches taken up by the partners and taken to the domain farmers and beyond
* Effective participation and leadership in community mobilization for the different in-situ and ex-situ agricultural water management
* The amount of capital invested as cost-sharing mechanisms (could be in kind)
* Number of technologies brought in by UNIVESIRTIES and NARS

## Communications and Knowledge Management / Transfer

*What arrangements will you put in place to communicate your activities and their benefits? What knowledge specific products and activities will you need to implement to support this.*

* Innovation platform for integrated;
* Irrigators’ field day ( both domain and intervention farmers);
* Cross site learning events ( to sites where the proposed technologies are working and also to sites which is very successful);
* Decision support tools for agricultural water management solution ( policy briefs, evidence briefs);
* AWM management across landscape manuals and also promote successful models
* Radio.